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ABSTRACT

A study analyzed language-related and non-language-related textbooks used in India's secondary schools for compatibility of content across related curricular areas. The textbooks prescribed for standards 5 and 6 in Kannada, Hindi, and English for both State and Central school systems were analyzed. Language texts were analyzed for linguistic, thematic, and discourse elements. Science and social studies texts were analyzed for linguistic content only. Content comparisons were also made among language subjects and between non-language and corresponding language subjects. The results showed that for language subjects, lexical compatibility was low while grammatical, thematic, and discourse contents were fully compatible. Lexical compatibility also decreased with increasing difficulty level. For non-language subjects, lexical compatibility was low, with unwarranted synonyms and sentential complexity. The implications of these findings for instruction that takes advantage of first language knowledge for second language learning are discussed. (MSE)

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COMPATIBILITY OF LANGUAGE USE ACROSS THE THE CURRICULUM IN SCHOOL LEVEL TEXTBOOKS*

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Abstract

The purpose of this study was to describe the methodology used for analysing the textbooks and comparing their contents for compatibility across relatable curricular areas and also discuss the results of compatibility. Compatibility was inferred on the basis of assessing contentwise relatedness existing between different curricular subjects. Language and non-language textbooks of both State and Central school systems prescribed for standards V and VI in languages Kannada, Hindi and English were selected for analysis. Textbooks of the language subjects were analysed for three types of contents - linguistic, thematic and discourse forms. Linguistic content was further classified into lexical content and grammatical structure. Non-language textbooks of Science and Social studies were analysed for linguistic content only. Contentwise comparisons were further done in between language subjects and between non-language and corresponding language subjects. The results showed that for language subjects lexical compatibility was low while grammatical, thematic and discourse contents were fully compatible. Also, the lexical compatibility further decreased from standard V to VI. For non-language subjects, it was not only that the lexical compatibility was very low but also unwarranted lexical synonymy and sentential complexity occurred in them. The implications of these findings have been discussed.

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To emphasize the importance of language in education is to emphasize the obvious. In school learning, language plays a pivotal role by manifesting itself as a curricular subject, as a documented medium for other curricular subjects and also an effective medium for the interaction between the teacher and the taught. Language, thus forms the foundation of the total school curriculum and consequently the total educational programme itself. As a result, the educational failure, particularly in a multilingual context, can be viewed as essentially a linguistic failure.

Illiteracy among the vast majority on the one hand, and inadequate expression of empty verbalism among the majority of literates on the other, are all instances of linguistic failure. Linguistic failure is primarily due to the failure to link the hundreds of languages and dialects of the subjects' early experience with the mainstream educational languages (cf. Pattanayak, 1975 and 1976) and also to establish proper coordination between different aspects of the present day curriculum, specifically with respect to the use of language. The most obvious reasons for this failure is that in this country 'so far the general structure of language instruction has not been studied objectively and the linguistic content is not spelled out adequately'. (Khubchandani, 1978:1). While studying the position of languages in school curriculum in India, Chaturvedi and Mohale (1976) have also realised

that 'a scientific status study of language instruction in the country is all the more needed and it is the base of all the types of instructions in all the curricular areas or subjects and is very much diversified in its character in India due to some historical reasons.' (P.1).

The Central Institute of Indian Languages (CIIL), which serves as a nucleus to all activities related to Indian languages, has undertaken scientific research in educational use of language, especially in areas which have been either inadequately explored or totally neglected. As a step towards identifying the problem areas in the study of educational use of language, an investigation was conducted with regard to the objectives of the language syllabus, the classroom language teaching practices, the procedures for the assessment of student achievement and content of the teacher training programme for language teaching and the textbook for language teaching. This study revealed a wide gulf between all these aspects (cf.CIIL Report (mimeo), 1977). Similarly, Dave and Pattanayak (1974) examined the language achievement at the end of the school stage and the language requirement at the beginning of the college entrance stage when mothertongue is the medium of instruction at both stages and proved the existing gap. Srivastava and Khatoon (1980) found that English medium students achieve better than those in the mothertongue medium and in this connection they pointed out that this might be due to the difference in the quality of the text books and other teaching conditions between the two media (also,

cf. Pattanayak, 1984 and Srivastava and Ramasamy, in progress).

All the studies discussed above highlighted the need for a clear examination of the textbooks in a psycholinguistic perspective. Therefore, a study was undertaken by the CIIL to analyse the contents of textbooks in a greater detail and compare them for compatibility across the curricular areas. (cf. Ramasamy and Ramamani, 1981). This paper, which is a partial report of the above study, aims to describe the methodology used for analysing the textbook and comparing their contents for compatibility across relatable curricular areas and also discuss the results of compatibility.

The term 'compatibility' is here used on par with one of the most fundamental educational principles viz., the new learning builds on the resources that the learner already possesses. Gatherer (1977) records that Bruner has used the term 'Compatibility' in a similar meaning. Ausubel (1968) emphasizing the importance of the above principle says that 'If I had to reduce all of educational psychology to just one principle, I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach him accordingly'. (P.VI). 'Compatibility' thus defined by the above educational principle is a pre-condition for positive transfer to take place between two relatable learning tasks.

The notion of 'compatibility' when extended to the study of educational use of language gives way to different interpretations from different theoretical viewpoints of language learning viz., behaviouristic and mentalistic

viewpoints. According to the behaviouristic viewpoint (cf. Skinner, 1957), which considers language as a habit system acquired extrinsically through experience, compatibility of language use would be characterized by similarity in linguistic form between two relatable situations. The mentalistic viewpoint (cf. Chomsky, 1972 and 1977) conceives language as an innate system and language learning a process of selection of the best grammar compatible with the available data. Compatibility of language between two situations from this viewpoint has to be considered in terms of similarity in rule systems. For the purposes of the present study, an eclectic approach has been preferred as it was found that the similarity of rules was useful for comparing grammatical content and similarity of form for lexical content.

Since it was felt that this study is a new attempt in this line, the methodology has been described below at some length in order to get it critically assessed.

METHOD

1. Material

The material consisted of sixteen textbooks in all. The distribution of these textbooks along different school systems - Karnataka State and Central schools, standards V and VI, curricular subjects - language (first, second and third) and non-language (science and social studies) subjects and languages - Kannada, Hindi and English is given in Appendix 1.

The textbooks of both Karnataka State and Central Schools were selected in order to see whether the disparity between the

two school systems in introducing second and third languages at different stages has any effect on compatibility of language use in the textbooks. In Karnataka State school system second language is introduced at standard V and third language at VI. In central school system, first and second languages start from the beginning and third language starts from standard V. The option for standards V and VI was a consequence of the fact that the study included all the three language subjects, which could be found only at these levels. The reason for taking up textbooks of all the three language subjects was to study how far the language use in second and third language textbooks turned out compatible with those of first language. In otherwords, this was to study how far the knowledge of language gained out of first language learning has been utilized in the learning of second and third languages. Textbooks of non-language subjects were chosen to study whether the language used in these non-language subjects was compatible with the language used in the corresponding language subject. Due to constraints of time, only two non-language textbooks viz., Karnataka State Schools - V standard Kannada medium social studies and central schools - V standard - English medium science were studied. The choice of three languages Kannada, Hindi and English ensued from the restriction to Karnataka State school and central school situated in Mysore and also from the general constraints of the study as a pilot attempt.

2. Criterion for compatibility

Compatibility, which was earlier defined to be the linking relationship between previous and new learning tasks, was assessed for textbooks on the basis of the 'relatedness'

between them in terms of their contents. 'Relatedness' between two elements referred to the sharing of some property or principle in common between them. 'Relatedness' was differently manipulated depending upon the nature of the textbook content compared and the dimension of comparison made. Percentage of relatedness was used as the criterion for comparison of textbook compatibilities between different school systems, standards and languages. The specific details of the application of 'relatedness' and 'percentage of relatedness' will follow in the next section (3b).

3. Procedure

The study was completed in two phases. The first included a content analysis of textbooks and the second a comparison of contents to assess compatibility between relatable textbooks. An account of these two phases is given below:

(c) Content analysis of textbooks

The content of a textbook was broadly classified into three components viz., (i) linguistic content, (ii) thematic content and (iii) discourse forms. Of the sixteen textbooks fourteen pertaining to the language subjects were analysed for all the three components and the other two belonging to non-language subjects (social studies and science) for linguistic content only. Analysis of thematic content and discourse forms for non-language textbooks was not needed since these subjects are related to a particular broader content area and a unitary form of discourse is normally used in them. Though the major focus

of the study was on linguistic content, the other two were also taken up as these are factors closely related to language use.

(i) Linguistic content

The linguistic content was divided into two sub-components viz., (i) the lexical content, including the list of words and their meanings and (ii) grammatical content consisting of the structure and function of words, phrases, clauses and sentences. As for the lexical content, all the words as they occurred in the textbook were entered on paper slips along with their meanings and grammatical functions. Then, they were classified into content words, which included the grammatical categories of 'noun', 'verb','adjective' and 'adverb' and function words, which included the grammatical categories of 'pronoun', 'preposition'/'postposition','conjunction' and 'interjection'. The category 'noun' was divided into 'classified' and unclassified' nouns. The 'classified nouns' were further subclassified into various semantic classes like 'animals, birds and insects','human body parts', 'kinship terms', 'professional terms' and so on. The concrete nouns which did not come clearly under any specific semantic class and the abstract nouns were treated as 'unclassified nouns'. The proper nouns devoting names of persons and places were not taken into consideration as they are commonly viewed as posing no significant problem for learning. The words belonging to each category, sub-category and class were alphabetically arranged. For counting purposes the base-form of the word was taken into account omitting the inflectional variations. For example, in the case of repeated occurrences like 'come', 'comes' and

'came' the base form 'come' alone was taken into account.

In regard to the grammatical content, the types of inflectional changes like 'case', 'tense', 'aspect', 'mood' and 'voice', the types of phrases and clauses with their grammatical functions such as 'adjectival phrase or clause' and 'adverbial phrase or clause' and the types of sentences such as 'declarative', 'interrogative', 'imperative' and 'exclamatory', as occurring in the textbook were recorded separately. Complex sentences involving stacking of a particular clause, or successive repetition of a particular clause and lengthy sentences with more than two subordinate and/or coordinate clauses were also recorded.

(ii) Thematic content

The major themes like 'home, school and environment', 'religion', 'health', 'pastime', 'nature', 'visiting places', 'fiction and its kinds', 'pauranic story', 'mythology', 'social story', 'jathaka tale', 'social and cultural activities', 'historical ancedotes', 'science', 'national development', transportation', 'patriotism', 'adventure and bravery', 'wit and humour' and 'life and people of other lands' were analysed.

(iii) Discourse form

The major discourse forms like 'description', 'narration', 'dialogue', 'letter' and 'poems' were analysed and noted as they occurred in each textbook.

b. Study of compatibility of textbook contents

The textbooks contents analysed in the manner described

above were compared in between language subjects and between language and non-language subjects using the criterion of 'relatedness'. Subject language compatibility was assessed for all the three types of contents viz., linguistic, thematic and discourse forms and non-language subjects compatibility for linguistic content only.

(i) Subject language compatibility

Compatibility between different language subjects was a case of inter-language comparison between textbook contents of English and Kannada, English and Hindi and Kannada and Hindi. Comparison between textbooks were made contentwise.

Linguistic content

Lexical relatedness was assessed on the basis of translational equivalence. Translational equivalences in terms of near synonymy and antonymy were also considered as related. For example, suppose the word 'girl' occurred in the English textbook and instead of its exact equivalent word huduga in Kannada, even if huduga 'boy' or hennu 'female' was found to occur, then it was taken as related since huduga is an antonym to 'girl' and hennu a near synonym. Grammatical relatedness was tested on the basis of functional equivalence of grammatical categories like 'tense', aspect', 'mood', 'noun modification' and 'verb modification'. If the textbooks under comparison had a certain grammatical category in common, then it was taken as a case of relatedness in spite of the differences in form or structure and positional distribution. Thus, Kannada relative clause structure banda huduga

'the boy who came' was taken to be related to its functional counterpart in English 'the man who teaches grammar'. Translational equivalence was not a necessary condition in such cases.

Thematic content

Thematic relatedness was assessed by the recurrence of a particular theme or sub theme in the textbook whose compatibility was assessed, from the one that formed the basis for comparison.

Discourse form

Relatedness of discourse form was also assessed by the recurrence of a particular discourse form or its subform in the textbook whose compatibility was assessed from the one that formed the basis.

Subject language compatibility was thus assessed for seven textbooks of second and third language subjects. Of them, four belonging to second language English were compared with first language Kannada and Hindi textbooks. The other three belonging to third language Kannada and Hindi textbooks. The other three belonging to third language Kannada and Hindi were compared first with the corresponding first language textbooks and then with second language textbooks. There were nineteen comparisons in all.

(ii) Non-language subject compatibility

Compatibility between non-language and corresponding language subject textbooks was a case of intra-language comparison and it was done for linguistic content only.

Lexical content

Lexical relatedness was assessed on the basis of both formal and semantic relatedness between words. Formal relatedness included repetition of a word with or without inflectional and derivational changes, as for instance, the word 'book' might have got repeated as 'book' itself or inflected as 'books' or might have undergone derivational change as 'bookish', all denoting formal relatedness. Formal relatedness also included repetition of a word with difference in meaning and shades of meaning, which could be explained by the relationships like 'homonymy' and 'polysemy'. The word 'button' denoting both 'button of a shirt' and 'button of a switch' explains 'homonymy' and the word 'rice' denoting both 'cooked rice' and 'uncooked rice' is a case of 'polysemy'. Semantic relatedness refers to the semantic relationships between words as could be explained by relationships like 'synonymy' and 'antonymy'.

Grammatical content

Grammatical relatedness was assessed by both formal and functional relatedness. Formal relatedness between two structures is characterized by the possibility of deriving one from the other. For example, the declarative sentence 'you can do' and the Yes/No interrogative sentence 'Can you do?' are formally related on the basis of deriving the latter from the former with the help of the rule 'auxiliary inversion'. Functional relatedness between two structures is characterized by both having the same grammatical function, as for instance, the adjectival word 'educated' in the phrase 'educated persons'

and the relative clause 'who are educated' in the noun clause 'the persons who are educated' are related because of their sharing the function of modifying the head noun 'these persons'.

Non-language subject compatibility was studied for two textbooks viz., (i) social studies (Kannada medium) of Karnataka State School - V standard and (ii) Science (English medium) of Central school V standard in comparison with their corresponding language subjects.

C. Comparison of Compatibility

The percentage of relatedness was calculated for the total lexical content and this percentage which was an index of lexical Compatibility was used as the criterion for comparing textbooks between different school systems, standards and languages. This kind of comparison was, in this study, possible and hence made only for subject language compatibility.

RESULTS

The results of the compatibility study have been given in tabular form in Appendix 2. Due to limitations of time and space only a set of tables for a single comparison from each of the two types of compatibility is exemplified here. The major trends that emerged from each of the two types of compatibility assessment viz., subject language compatibility and non-language subjects compatibility and the comparison of compatibility across school systems, standards and languages are presented below in their order.

(a) Subject language Compatibility

As for the second and third language textbooks, the contents of their grammatical structure, theme and discourse forms are fully compatible with the corresponding first language textbooks while in contrast, the lexical content shows a low compatibility, the percentages ranging between 22% and 57%. The same is true with the compatibility of third language textbooks with those of second language also. (cf. Tables 1 and 2).

(b) Non-language subject compatibility

(i) The social studies (Kannada medium) textbook of Karnataka state school V standard, when compared with the corresponding first language Kannada textbook shows that the lexical compatibility is very low (28%) (cf. Table 3a) and the grammatical content is fully compatible (cf. Table 3b). Besides the compatibility study, lexical synonymy and sentential complexity were observed in this textbook (cf. Appendix 3).

(ii) The science (English medium) textbook of Central school V standard, when compared with the corresponding second language English textbook shows that the lexical compatibility is very low (20%) and the grammatical content is fully compatible.

(C) Comparison of Compatibilities

(i) A comparison of the percentage of lexical compatibilities of second language textbooks between Karnataka state school and Central school systems shows that the second language English textbook of the former shows higher compatibility than that of the latter at V standard while the converse is true at the level of VI standard. With regard to the third language compatibility

with first language, VI standard third language Hindi textbook of the former shows higher compatibility than the latter while the converse is true with the third language Kannada textbook., As for the third language compatibility with second language English, VI standard third language textbooks of the latter shows slightly higher compatibility than the former, (cf. Table 2). Therefore, with respect to textbook compatibilities any clear-cut generalization of the difference between State and Central school systems does not emerge.

(ii) Lexical compatibility is found to decrease through progressive stages of learning, viz., from V to VI standard. (cf. Table 2).

(iii) Textbooks of different languages do not show any clearcut difference between themselves. (cf. Table 2).

DISCUSSION

Irrespective of school systems and languages, attestation of a low lexical compatibility in between language subjects and between language and non-language subjects, a further decrease of lexical compatibility between language subjects in progressive stages of learning and the occurrence of unwarranted lexical synonymy and sentential complexity in Kannada medium social studies textbook are all indicative of the absence of a microlevel planning with respect to the use of language and proper coordination between different components of the curriculum.

Low lexical compatibility across curricular subjects reported above cannot, however, be taken as it is. Some of the limitations through which this result has been arrived at have to be considered. The textbook contents of previous stages of

learning viz., I-IV standards, from where possibly link could have been found for a subset of nonrelated words, have not been taken into account in this study. Moreover, for a subset of nonrelated words like those belonging to the classes 'animals, birds and insects', 'human body parts' and 'kinship terms' link has to be found in the home or environmental language. In the case of nonlanguage subjects like science and social studies low compatibility is also due to the fact that the list of nonrelated words include a major set of technical vocabulary (cf. Table 3a), for which link cannot always be expected in the corresponding subject language textbook.

In spite of the above limitations found in assessing lexical compatibility across curricular subjects the observation that the lexical content of textbooks are not properly planned stands valid. This is clearly evident from the findings that lexical compatibility decreases in progressive stages of learning (cf. Table 2) and synonymous words without any clear semantic purpose are used in the content subject textbook (cf. Appendix 3a). Low compatibility of lexical content between relatable textbooks, unwarranted use of lexical synonymy and sentential complexity (cf. Appendix 2b), in content subject textbooks are factors that will hinder comprehensibility of the text material to a greater extent.

CONCLUSION

This study was based on the assumption that the plan for the curriculum should be in such a way that the second and further language learning significantly utilise the knowledge of first language and the language of non-language subjects is as far

as possible controlled to be within the limit of the structures acquired through the corresponding language subject. An examination in these lines of the textbooks shows that they remarkably fail in tapping the linguistic potentiality already acquired by the learner and facilitating him with full comprehensibility, thus creating the linguistic failure highlighted in the beginning of the study. These problems identified with textbooks could be rectified at the stage of evaluation, if not at the stage of preparation of the textbooks. But, the results of this study hint that a similar low compatibility or incompatibility may be anticipated in other aspects of the curriculum like teacher and teaching methods. Identification of similar problems in every aspect of the curriculum would ensure better planning of language use across the curriculum, thus, paving the way for attaining a more meaningful education.

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APPENDIX 1

Flow Diagram showing the distribution of textbooks along different school systems, standards and languages.

Textbooks

Karnataka State School

V Std.

Lg. subjects

First lg.: Kan. (1), Hindi (2), Eng. (3)

Sec. lg.: Social Studies (Kannada Medium) (4)

Non-lg. subjects

VI Std.

Lg. subjects

First lg.: Kan. (5), Hindi (6), Eng. (7)

Sec. lg.: Kan. (8), Hindi (9)

Third lg.

Central School

V Std.

Lg. subjects

First lg.: Kan. (1), Hindi (10), Eng. (11)

Second lg.: Kan. (12), Hindi (13)

Third lg.

Non-lg. subjects: Science (Eng. Medium) (14)

VI Std.

Lg. subjects

Fir. lg.: Kan. (5), Hindi (15), Eng. (16)

Sec. lg.: Kan. (8), Hindi (9)

Third lg.

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APPENDIX 2

Compatibility of second language English textbook of Karnataka State School V Standard with the corresponding first language Kannada Textbook.

Table 1(a) Lexical Compatibility

Category/class	Total	Related		Nonrelated	
		Number	Percentage	Number	Percentage
a. Noun					
1. Classified					
(i) Animals, birds and insects	21	13	62	8	38
(ii) Human body parts	7	7	100	0	0
	28	20	71	8	29
2. Unclassified	132	64	48	68	52
	160	84	53	76	47
b. Verb	57	42	74	15	26
c. Adjective	38	11	29	27	71
d. Adverb	6	6	100	0	0
	261	143	55	118	45

Table 1 (b) Grammatical Compatibility

Grammatical structures occurring in the textbook	Related/Nonrelated	IF related, the related structure
1. Verb		
(a) Intransitive e.g., My mother is standing up	Functionally related	1. (a) Sārati bēga nade 'Sarathi, walk fast'
(b) Transitive e.g. She is carrying a cup	"	(b) Satgunagaḷannu nānu sadā gauravisuttēnē 'I always respect good character'
2. Tense		
(a) Present simple e.g., Look at that big tree	"	2 (a) bhaktaru sivalingada darśana Paḍayuttarē 'The devotees obtain the sight of god'
(b) Present continuous e.g., The birds are flying	"	(b) Subhatre maganannu ārisi bīlkoduttāḷe 'Subatre blesses her son and bids farewell to him'
3. Negation e.g., The fish is not swimming	"	3.
4. Simple declarative sentence	"	4. of 2(a)
5. Simple interrogative sentence		5.(a) Ī Kaurava sainyakke nānu hedara bēkē 'Should I be afraid of this Kaurava army?
(a) Yes/No question e.g., Is she dancing?		
(b) Wh-Question e.g., What is she doing?	"	(b) idakkēnu upāya? 'What is the solution for this?'

Table 1 (c) Thematic Compatibility

Themes occurring in the textbook	Related/ Nonrelated	If related, the related theme
1. Home, school and Environment (house, bag, books, teacher, post office, doctor, etc.)	Related	i) namma ūru 'our city' ii) namma mane 'Our house'
2. Nature (tree, sky, birds, etc.)	Related	i) nanna bayake (Poom describing beauty of nature) ii) huli 'tiger'.
3. Pastime	Related	Related to lexical items like 'cricket' 'football' 'volley ball', etc.
4. Transportation (bicycle, bullock cart, train, bus, etc.)	Related	Related lexical items like 'bus', 'bus stand' etc.

Table 1 (d) Compatibility of discourse forms

Forms occurring in the textbook	Related/Non-related	If related, the related form
1. Description through simple sentences	Related	Most of the lessons are in the form of descriptions
2. Rhymes	Related	10 Poems

Table 2: Comparison of Lexical Compatibility of subject language textbooks

Curricular Comparison	Std.	Languages	School State	School Central
1. Second language with first language	V	Kannada	55%	36%
		Hindi	56%	43%
	VI	Kannada	22%	26%
		Hindi	22%	24%
2. Third language with first language	V	Kannada	-	57%
		Hindi	-	57%
	VI	Kannada	33%	18%
		Hindi	27%	57%
3. Third language with second language	V	Kannada	-	46%
		Hindi	-	46%
	VI	Kannada	18%	19%
		Hindi	16%	20%

Compatibility of Social Studies (Kannada Medium) textbook of Karnataka State School - V standard with the corresponding first language Kannada textbook

Table 3 (a) Lexical Compatibility

Category/Class	Total	Related		Nonrelated	
		No.	Percentage	No.	Percentage
1	2	3	4	5	6
a. Noun					
1. Classified					
i) Animals, birs and insects	23	20	87	3	13
ii) Human body parts	15	13	87	2	13
iii) Kinship terms	5	5	100	0	100
iv) Professional terms	63	14	22	49	78
v) Dynasties	17	4	24	13	76
vi) Metals	10	1	10	9	90
vii) Departments	10	0	0	10	100
viii) Religion	6	0	0	6	100
ix) Books related to history and lit.	34	0	0	34	100
x) Implements	17	1	6	16	94
xi) Directions	6	0	0	6	100
xii) Seasons & months	12	0	0	12	100
xiii) Planets	12	0	0	12	100
xiv) Lines (rēkhe)	10	0	0	10	100
xv) Circle (vrutta)	3	0	0	3	100
xvi) Zone (valaya)	5	0	0	5	100
xvii) Sphere (gōḷa)	5	0	0	5	100
	253	58		195	

1		2	3	4	5	6
		253	58		195	
xviii)	Rocks (kallu)	9	0	0	9	100
xix)	Soil (mannu)	5	0	0	5	100
xx)	Winds (māruta)	6	0	0	6	100
xxi)	Oceans, seas and related words	21	0	0	21	100
xxii)	Dams	12	0	0	12	100
xxiii)	Rivers	32	0	0	32	100
xiv)	Mountains & cliffs	23	0	0	23	100
xxv)	Crops	38	0	0	38	100
xxvi)	Trees	26	0	0	26	100
xxvii)	Transport	13	0	0	13	100
		438	58	13	380	87
2. Unclassified		1483	475	32	1008	68
		1921	533	28	1388	72
b. Verb		467	153	33	314	67
c. Adjective		281	79	28	202	72
d. Adverb		126	25	20	101	80
		2795	790	28	2005	72

Table 3(b) Grammatical Compatibility

Important grammatical structures used in the textbook	Related or Nonrelated	If related, the related structure
1	2	3
1. Noun modification		
a) Participial relative clause e.g. - Restrictive bahu bēgavāgi hariyuva parvata pradēśa nadigaḷu 'the rivers of the mountains which stream down with great speed'	Related	Same structure
b) Participial relative clause - Nonrestrictive e.g. holayuthiruva nakṣatragaḷu 'twinkling stars'	"	"
c) Correlative relative clause e.g. Sūryanu yāvāga namma nettiyalli baruttāneyo āga madyāna hanneraḍu gaṇṭe samayavāguttade 'When the Sun comes right on the top of our heads, then it is 12 0' Clock at noon'	Related	"
2. Verb modification Adverbial clause of		
a) Time e.g. namma bhūmiyannu gātradoḍane holisidāga bahaḷa chikkadāgide 'when we compare the earth with the size of the Universe it is very small'	Related "	" "

1	2	3
b) Comparison		
e.g. uttara mattu dakṣiṇa druvagaḷannu sērisiruvante kāṇisuttiruva rēkhegaḷu 'The line which look as if the north and south zones are joined together'	Related	Same structure
c) Reason		
e.g. modaleneyadu tanna akṣadamēle cakrakāravāgi uruḷuvudarinda hagalu rātrigaḷu āguttade 'Day and night are caused from the first one revolving round its own axis'		
d) Concession		
e.g. istella vyatyāsagaḷiddarū ēkarūpate eddukānuttade 'Inspite of these differences similarity is very prominent'		
3. Coordinate sentences	"	"
e.g. candragrahavu sahabhūmiyante yāvāgalū tanna akṣadamēle timguttade mattu adēkāladalli bhūmiya suttalu sahatiruguttade 'The moon like the earth always revolves round its own axis and at the same time it also revolves around the earth'		

APPENDIX 3

a) Examples of Lexical synonymy

Noun

batte, vasana 'dress'

sava, hena 8'corpse'

cinna, bangāra, suvarna 'gold'

samaya, kāla 'period'

vānija, vyāpāra 'business'

aisvarya, sampattu 'wealth'

sēnāti, sēnādhipati 'commander-in-chief'

santati, vamsa 'clan'

vāyuguna, havāguna 'atmosphere'

āparana, hodike 'ornaments'

lavana, uppu 'salt'

horadēśa, paradēśa 'foreign'

bēsāya, vyavasāya 'agriculture'

Verb

ārambisu, prārambisu 'to begin'

parisīlisu, parīksisu 'to examine'

anasarisu, ādharisu 'to protect'

Adjective

mānava, manusya 'human'

purātana, prācīna, haleya 'ancient or old'

bruhat, dodda 'big'

udda, lambha 'long'

(b) Examples of sentential complexity

1. Nested and self-embedded construction

e.g. bhūmiyu ākāśadalli acca nīli bannada atyanta sogasāgi akarṣidavāgi holeholeyuttiruva ondu sundara upagraha

'Earth is a very beautiful attractive and shining planet in the deep blue sky'

2. A complex construction

e.g. sūryanu yāvāga namma nettiyalli baruttāneyo andare yāva rekhāmsadamēle sūryana kiraṇagaḷu neravagi bīḷuttavo āga ā sthaḷadalli madhyāna hanneraḍugeṇṭe samayanāguttade

'When the Sun comes right on the top of our head that is, the lattitude on which the Sun rays fall straight, at that time, and at that place it is 12 0' clock in the noon'

3. Self-embedding

e.g. nadigaḷa niru saha nelada mēliruva manninalliruva khanija hāgu uppannu karegisi samudrakke serisuttade

'The river water dissolves the minerals and soils of the land on which it flows and adds then to the sea'

4. A very lengthy sentence

e.g. namage bēkāda ādalita vyavasteyannu mādikolluvudu agatyavāda kanunugaḷannu racisikolluvudu, ellā prajekaḷe hakkubhādyategaḷannu nirdharisuvudu mattu ellājanarige tāratamyavillade nyāya, svatantrya, samānate ivugaḷannu odagisuvantaha ondu samvidhānavannu racisikolluvudu ondu mahatvāda kelasavāgitu

'The writing up of a constitution which could provide us with administrative clauses, necessary laws to decide about every citizen's rights and responsibilities and to provide justice, freedom and equality to all kinds of people without any partiality or bias is one of the major works'

5. Stacking of adverbial clauses

e.g. ādare rājyadalli āśānti tale dōridāga, ādalita yantra sariyāgi naḍeyade iddāga kēndra sarkāravu rājyada ādalitavannu vahisikollabahudu

'But whenever riots occur, and administrative machinery does not work in a state during that time, then the Central Government can take over the administration of the State.